Наиболее прогрессивно развивающими иновационные коммуникации в среде электронного бизнеса зарекомендовали себя следующие отрасли из сферы услуг: бухгалтерский учет; реклама; авиаперевозки; коммерческое обучение и тренинг; компьютерный сервис и программное обеспечение; таможенные брокеры; финансовые услуги; здравоохранение; страхование; исследования рынка; подбор персонала; новости и радиовещание; путешествия и туризм; переводы; дизайн и поддержка web-страниц; консалтинг; образование; типографские услуги и услуги графического дизайна; аукционные торги; все виды письменных работ (журналистика, техническая литература, редактирование и т. д.) [4].

Являясь высококлассными специалистами (инженерами, экономистами, финансистами и т. п.), такие руководители подразделений, как правило, не владеют представлениями о существовании действенных инструментов адаптации фирмы к постоянно меняющейся рыночной ситуации – маркетингом и логистикой.

Действенным средством для уменьшения влияния перечисленных фильтров является: ***разработка и освоение на практике выверенного набора индикаторов***, представляющих динамику маркетинговых показателей работы предприятия, подразделений (информационная логистика внутренней среды организации); повышение экономической и маркетинговой квалификации руководителей подразделений на предприятии.

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GREEN LOGISTICS AS A SUSTAINABLE DEVELOPMENT DIMENSION

Томашева Е. В., Почко Е. О.

The principle of the sustainable development of society, adopted in 1987, provides for the responsibility of the State and civil society to meet the needs of both present and future generations. For the first time, the International Commission on Environment and Development applied the Concept of sustainable development, which addresses the needs of the present without jeopardizing the ability of future generations to meet their needs. The very concept of sustainable development was adopted at the United Nations Conference on Development and Environment in Rio de Janeiro in 1992. Today, the concept is the most common and often referred to as the world model for the future of civilization. It involves three areas (Figure 1):

1) economy. From this perspective, the concept of Economic efficiency is considered as follows: long-term economic projects that take into account the patterns of nature, as a result, are more effective than projects that do not take into account the possible environmental consequences;

2) environment. The main objective of sustainable environmental development is the stability of physical and environmental systems. Ignoring environmental needs would degrade the environment and jeopardize the existence of all mankind;

3) social sphere. It was the awareness of social problems that led to the formation of this concept, aimed at preserving cultural and social stability, as well as at reducing the number of conflicts causing destruction [1].

Figure 1 – The Three-pronged Concept of Sustainable Development

The principle of Sustainable development has also been adopted by the Republic of Belarus: according to the National Strategy for Sustainable Development until 2030 (NSSD 2030), the three above-mentioned components - economic, environmental and social - should be in harmony with each other.

The Republic of Belarus has been a member of the International Renewable Energy Agency (IRENA) since 2009. In turn, the European Union, in cooperation with the Republic of Belarus, has launched a Green economy project aimed at promoting Green Economy mechanisms in Belarus. This project was designed for 30 months from November 2014 to March 2017, the budget amounted to 1,465,000 euros.

Also, Belarus recently completed two large projects that are part of the EU 's large-scale Green Economy program. The first - Facilitating the transition of the Republic of Belarus to a Green Economy was responsible for the practical part. The second EU project - Technical assistance to support the development of the Green Economy in Belarus - is for institutional assistance. The beginning of the greening of the Belarusian economy cost 12 million euros. In order to facilitate the transition of the Republic of Belarus to a Green Economy in 2016, the National Plan until 2020 was approved by a decision of the Council of Ministers of the Republic of Belarus. This Plan contains about 40 activities to be implemented by 2020. According to the National Plan, the development of a Green Economy in the Republic of Belarus is based on the following principles:

- ✓ compliances to the principles (purposes) of sustainable development;
- ✓ rational and effective use of resources, steady consumption and production;
- ✓ inclusions of ecological and social values in the system of economic account;
- ✓ priority of use of Green Tools and approaches at achievement of the goals of sustainable and social and economic development;
- ✓ improving competitiveness and ensuring growth in key sectors of economy [2].

Today there was an understanding of sustainable development as optimum consumption of limited resources and use environmentally conserving, energy saving and the material saving technologies at all stages of a goods life cycle, including production and a feather a raw materials job, minimization and destruction of waste, creation of environmentally friendly products. The Kyoto Protocol of 1997 became the first global agreement on environmental protection and international trade in quotas for emissions of noxious gases.

The World Economic Forum of 2009 proclaimed a course on Green Economy, reduction of ecological threats and risks. The index of environmental efficiency in Republic of Belarus made 64.98 points of 100 in 2018. Our country took the 44th place from 180 countries.

Energy is known to be a major source of greenhouse gases, accounting for about 37% of total emissions [4]. The United Nations Conference on Climate Change in Paris in 2015 proposed the Framework Convention on Climate Change, according to which countries should not allow the temperature of the planet 's atmosphere to rise by more than 2° C. To do so, it is necessary to avoid the construction of environmentally dirty electricity generation, which will limit the growth of greenhouse gas emissions. According to experts, transport accounts for about 8% of all carbon dioxide emissions on the planet, storage facilities account for another 3% [3]. In this regard, the introduction of Green Technologies in logistics activities will make a significant contribution to the preservation of a climate on a planet suitable for human activity.

The concept of Green Logistics became widespread from the middle 1980 with the emergence of the Concept of social responsibility of business. At the current stage of global trade development, environmental problems, which have become increasingly in recent years, are also becoming significant

for various business areas. Companies that have built stable logistics systems are shifting their attention from optimizing exclusively logistics operations (packaging, transportation, warehousing, etc.) to a factor that has recently also influenced the total cost of supply chains. It is about interaction of the company with the environment at the whole stage of goods movement. This is due to the increasing political impact and legislative regulation, the increasing importance of environmental protection factors and the increasing demand for environmental management professionals. The emergence of these factors is linked to an elementary awareness of the extent of the impact of human activities on the environment, which has become comprehensive in recent years.

Green logistics can be defined as activities aimed at identifying and measuring the negative impact on the environment in the process of bringing the product to the end-user, as well as studies carried out to find ways to reduce this negative impact.

The reasons for the implementation of Green Logistics are:

- efficient use of energy resources;
- minimization of losses due to inefficient production process;
- efficient use of material and raw materials resources;
- minimization of environmental impacts.
- efficient use of existing capacities (production, storage).

The directions of realization of the basic principles of Green Logistics can are presented in the following drawing (Figure 2).

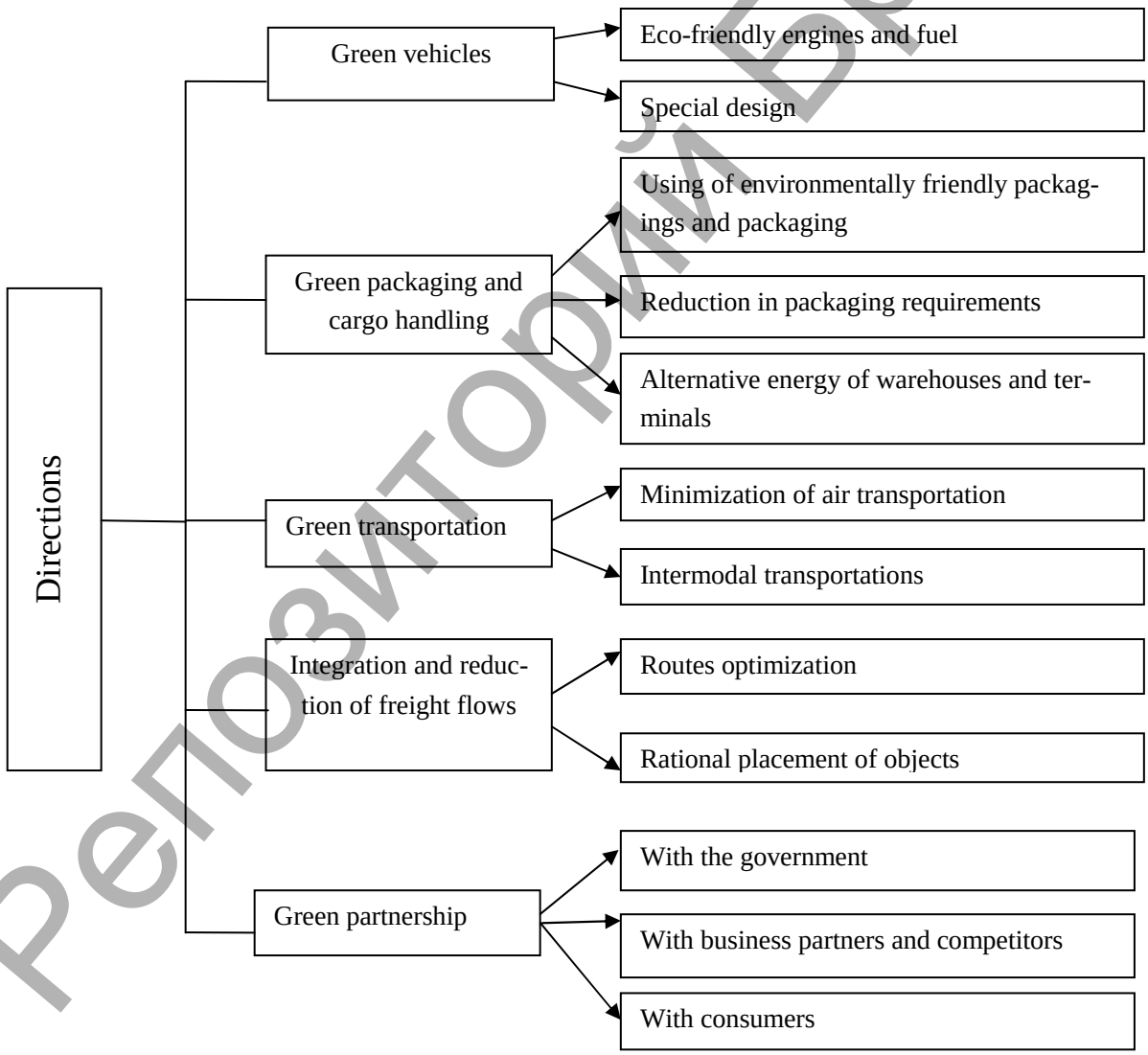

Figure 2 - Green Logistics Directions

In practice the separate directions can are crossed among themselves, and activity of the companies seeking for achievement of market advantages at the expense of Green Logistics can be reduced to the following main directions:

• seating of production and warehouse capacities so that the volumes of transportations necessary for their service were minimum;

• speedup of operations on loading unloading of vehicles for drop of need for them;

• every possible cutting-down of use of the motor transport (it can be carried out by switching of transportation of goods to alternative modes of transport or the appeal to services of intermodal transport operators);

• use of vehicles with the best ecological characteristics (if the refusal of automobile transportation is impossible), including, on alternative types of fuel;

• careful planning of routes of transportations, minimization of weight of transport container and packing, ensuring the greatest possible loading of the rolling stock for providing the minimum run and fuel consumption;

• preference of the market partners dividing priorities of Green Logistics and joint realization with them the corresponding projects;

• participation in state programs and support of the public initiatives directed to realization of the principles of sustainable development [5].

Since the introduction of the European Union Packaging Directive, companies have increased the use of reusable containers, waste processing equipment for production and logistics activities, and introduced packaging turnover management systems. The principles of Green Logistics are also promoted by the European Logistics Association, which annually holds a European rating of logistics projects. In 2012, the Green Freight Europe project was launched. It was initiated by shippers and logistics companies to develop common approaches to determining harmful emissions factors, comparison of environmental parameters of different transport operators, etc. Green Logistics becomes an important factor in attracting customers, and consumers are paying increasing attention to the value of the carbon footprint of transport and logistics companies. According to experts, in the near future the use of Green Technologies in logistics will become as necessary as the introduction of a quality management system [6].

Thus, return flows, along with direct flows, have become more important in the organization of supply chains due to the growing focus on the Green Economy and the possibility of reprocessing returned goods. In this situation, enterprises are faced with the question of whether to maximize return flows and minimize the harm caused by the finished product and/or packaging released after use.

For the sake of production of various products every year 60 billion tons of raw materials are extracted in the world. But only 7% of materials are reused or recycled. For Belarus, the problem is very urgent, as many resources are imported into the country, and as a result, the importance of being able to use them again increases. Good organization of production processes, as well as rational use of raw materials, can lead to visible economic results.

Measures are being implemented in Belarus on energy-efficient technologies and equipment, waste reduction and recycling, and the involvement of renewable energy sources in the fuel balance. The introduction of Green Economy principles can provide Belarus with GDP growth per 12-15%. More and more manufacturing enterprises have begun to apply special marking for their products. The environmental mark of conformity is applied to products that have passed the confirmation of compliance with environmental criteria of all necessary technical normative legal acts of the Republic of Belarus and is safe for the environment. In Belarus, such a sign can be found on the marking of synthetic detergents, refrigerators, wallpaper, TVs.

Marking of food products with the sign Natural Product is carried out for the purpose of declaring compliance of food products with the established requirements, realization of the right of the consumer to receive reliable information and implementation of competent choice of food products, increase of competitiveness and appearance on the market of a new class of food products.

The introduced technologies will start to pay for themselves in 2-3 years. By that time, the model of waste-free production will already be fully enshrined at the legislative level and supported by government. In order to take the necessary measures for effective waste management, it is necessary to understand the structure of their formation, the movement and the amount of accumulation. All waste in the Republic of Belarus is divided into municipal and household waste. Municipal waste - consumption waste and production waste like consumption waste. Waste consumption (household waste) is waste generated in the course of human activity unrelated to economic activity, waste generated in garage cooperatives, horticultural associations and other consumer cooperatives, as well as street and yard estimates generated in public areas of settlements.

Today, hard-to-separate waste accounts for a significant share of the overall waste structure. This kind of waste is mainly to be incinerated or buried at the landfills, as they cannot be related to any of the separated components. At the moment, the State program of collection (harvesting) and processing of secondary raw materials in the Republic of Belarus for 2009-2020 years is being implemented, according to which by 2025 it is necessary to extract at least 70% secondary material resources from waste. In addition to secondary material resources, it is necessary to learn to extract hazardous waste from the total volume of municipal waste. Belarus has already installed 3,000 280 containers for collecting batteries and 700 containers for mercury-containing lamps, collected old household appliances, and a medical waste disposal complex is operating at the Trostenetskiy landfill. A share of household waste is large. Every year the population of the Republic of Belarus emits 400 kg of solid municipal waste on average. Compared to 2008, this figure increased by almost 43% by 2018. Therefore, housing and utilities organizations are actively improving conditions so that the population can contribute to the protection of nature and the economy of the country.

Many organizations have realized the advantages of closed production over linear production. Already, three sectors of production - the production of construction materials, chemicals and the food industry - have begun to develop guidelines for the transition to a closed-loop economy (Circular Economy). It is an approach to designing and manufacturing products for reuse and recycling. That opens up new opportunities for logistics and transportation companies. Circular Economy helps accelerate innovation and attract new consumers for whom sustainable development is a priority. Closed-loop partners in supply chains should develop opportunities for information sharing and introduce new transport services that integrate infrastructure with the needs of a Circular Economy. In the Circular Economy, goods are continuously involved in transportation and do not fall into waste, as they can always be reused. The most complex logistics issues in a Circular Economy are the predictability of cargo flows, the low cost of materials and widely differing product qualities.

In closed-loop economics business processes, logistics costs are the most important factor in setting a competitive product price. That is why manufacturing companies that produce low-cost materials pay considerable attention to transportation costs and usually develop their own logistics schemes.

Cost-effective and sustainable supply chain management will be the major potential of successful companies in a circular economy. Fully digitized supply chains, covering all stages, from concept and production to logistics, will overcome most of the challenges in this area. Careful monitoring, tracking and modern logistics solutions are crucial factors.

Circular Economy principles are increasingly being introduced into everyday transport practices. One example of Green Logistics is the transport of goods with full load in both directions (round trips). The AsstrA company has been focusing on circular transportation over the past few years in developing new routes and planning for further expansion. During 2018, specialists of the AsstrA organized circular transportation mainly on the routes Belarus-Germany-Belarus, France-Russia-France, Ukraine-Czech Republic-Ukraine, Poland-Belarus-Poland, Russia-Romania-Russia and Russia-Poland-Russia. Most round trips included delivery of building materials, chemicals, wood and paper, and food industry cargo. In addition, the company predicts an increase in demand for such transportation for Hi-Tech and FMCG cargo [7].

As for transportation of the processed materials, most often in circular supply chains there is a speech about the load consisting of earlier used finished products, but not of raw materials. The logistics of Circular Economy includes modern technologies which collect data from sensors throughout all cycle of delivery and share them in real time with partners. Besides, the broadest application of model of circular economy is expected in the technological sector as reuse of electronics is easily integrated into return models. Logistic solutions, such as pre-paid shipping labels, smart packaging and schemes of return, should help to meet market demand.

One of the most striking examples of Circular Economy in operation is Nespresso - the global company using the program of return. Consumers can leave the used coffee capsules in pre-paid bags for processing in any place of a rack of UPS. Aluminum capsules separate from a coffee thick before melting of metal for use in new products. The fulfilled coffee cake is on sale as high-quality fertilizer for gardeners, the garden centers, municipalities and house owners.

The Carlsberg group started a collaboration with the Danish company ecoXpac, Innovation Fund Denmark and Technical University of Denmark to develop a fully biodegradable bottle for wood fi-

ber beer. The ultimate goal is to completely eliminate waste by creating environmentally friendly products and increasing the share of the Circular Economy.

In addition, the Danish potato processing company KMC began processing the remaining potato fibres into a protein-rich supplement for the food industry. Starch and fiber can be extracted and processed, thereby increasing the volume of used potatoes for the economic benefit of producers.

Another example is Finnish fertilizer manufacturer Ecolan, a subsidiary of Honkajoki Oy. Ecolan produces organic Agra fertilizer using meat and bone flour. The raw material is processed into powder, which is then mixed with other ingredients for production [7]

Adherence to Sustainable development principles is the basis for the success of modern business. More and more companies in the world are aware of the unique value of non-renewable resources and are seeking an optimal balance between the needs of the organization, society and nature. At the same time, an international and national institutional environment is being developed for the introduction of Green Logistics into economic activities, the system of accounting for harmful effects on natural areas and the evaluation of the effectiveness of companies 'efforts to protect the environment from pollution is being improved. The problem of recycling is becoming increasingly urgent not only for production enterprises, but also for the population. The more secondary raw materials are sent for processing, the more necessary is the formation of return flows and the effective organization of their movement.

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ПРОБЛЕМЫ РАЗВИТИЯ АВТОМОБИЛЬНЫХ ГРУЗОПЕРЕВОЗОК В РЕСПУБЛИКЕ БЕЛАРУСЬ

Кочурко О. А., Авдосенко С. Н.

Транспортная логистика занимает ведущее место в логистической системе Республики Беларусь. Это предопределено географическим положением республики как внутриконтинентального государства, не имеющего выхода к морю, и преимуществами автомобильного транспорта, являющегося оптимальным и эффективным средством доставки и распределения товаров как во внутреннем сообщении, так и на международных маршрутах.

Автомобильные дороги – важнейший элемент транспортной системы государства. Территорию Беларуси пересекают 2 трансъевропейских транспортных коридора, определённых по международной классификации под номером II (Запад- Восток) и под IX (Север-Юг) с ответвлением IXв. В настоящее время на республиканских автомобильных дорогах функционируют 383 автозаправочные станции, 393 пункта питания, 90 станций технического обслуживания и 53 придорожные гостини-